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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/378,201	08/19/1999	CHI FAI HO	04073.P005	8839

7590

01/12/2004

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EXAMINER

HOM, SHICK C

ART UNIT

PAPER NUMBER

2666

DATE MAILED: 01/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/378,201

Applicant(s)

HO ET AL.

Examiner

Shick C Hom

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 19 and 20 is/are allowed.
- 6) ☒ Claim(s) 1-6,8,10,12,13,17 and 18 is/are rejected.
- 7) ☒ Claim(s) 7,9,11 and 14-16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 24.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 9/29/03 have been fully considered but they are not persuasive.

In page 10 line 10 to page 11 line 6, applicant argued that Allen does not teach or suggest the use of one or more IP packets having a variable length and further, against using IP packets having a variable length is not persuasive because col. 16 line 55 to col. 17 line 8 teach that it is wasteful to encapsulate bursty data in TDM circuits, because many time slots may be allocated to null data; however, Allen does not teach against using variable length packets for bursty data as applicant suggested. Col. 10 lines 4-12 and col. 10 lines 41-49, Allen, Jr. et al. teach and suggest adapting constant bit rate data using AAL1 and connection-oriented variable bit rate data, e.g. voice data, bursty data, over ATM using AAL2 depending on implementation, wherein AAL2 having a variable payload to provide improvement in bandwidth efficiency clearly suggest the use of IP packets having a variable length. Further regarding argument in page 11 line 7 to page 12 line 20, Ylonen et al. in Fig. 2 shows and col. 3 lines 32-46 which recite that it is known to use IP packet wherein the data field is variable

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length clearly reads on a variable length IP packets as in claims 1, 17, and 18.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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4. Claims 1-6, 8, 10, 12-13, and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Allen, Jr. et al. (6,169,735) in view of Ylonen et al. (6,438,612).

Regarding claims 1, 17, and 18:

Allen, Jr. et al. disclose the method and apparatus comprising: configuring a circuit emulation service (CES) over an internet protocol (IP) network based on properties of the IP network (col. 9 line 14 to col. 10 line 23 and col. 16 line 55 to col. 17 line 8); and transporting the IP packets from the local interworking function to the remote interworking function according to the CES (col. 6 lines 30-50 and col. 16 line 55 to col. 17 line 8).

Regarding claim 2:

Allen, Jr. et al. disclose wherein the properties of the IP network comprise at least one of a maximum delay variation (col. 14 lines 19-39 and col. 10 lines 4-22), a bit error rate, out-of-order IP packet delivery, and an unpredictable packet loss rate.

Regarding claim 4:

Allen, Jr. et al. disclose a layer 2 protocol (col. 6 lines 17-22 and col. 9 lines 49-62).

Regarding claim 6:

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Allen, Jr. et al. disclose wherein the configuring the CES comprises: exchanging a plurality of CES control protocol (CESCP) information between the local interworking function and the remote interworking function (col. 6 lines 15-21).

Regarding claim 10:

Allen, Jr. et al. disclose buffering the plurality of IP packets received from the remote interworking function (col. 14 lines 19-39) for at least as long as a maximum delay variation; and outputting payloads of the plurality of received IP packets at the constant bit rate (col. 10 lines 4-22).

Allen, Jr. et al. did not teach the CES being configured to establish a tunnel between a local interworking function and a remote interworking function; encapsulating data received at a constant bit rate at the local interworking function into a plurality of IP packets configured according to the CES, wherein the plurality of IP packets includes a first IP packet having a variable length as in claims 1, 17, and 18. Allen, Jr. et al. did not recite the machine readable storage medium having stored thereon a plurality of machine executable instructions as in claim 18. Allen, Jr. et al. did not teach the tunnel being established to carry IP packets as in claim 3, wherein the tunnel includes layer 2 tunneling protocol L2TP as in claim 4 and the multi-protocol label switching tunnel as in claim 5.

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Allen, Jr. et al. did not recite wherein encapsulating the data comprises attaching a CES header to each IP packet as in claim 8. Allen, Jr. et al. did not recite wherein each IP packet further comprises at least one circuit, each circuit comprising at least one circuit header as in claim 12 and wherein the at least one circuit header comprises at least one of a circuit identification, a flag field, a sequence number, a first octet padding value, a last octet padding value, and a data field as in claim 13.

Ylonen et al. teach that it is known to provide the process of encapsulating data packets for transmission over a different logical network called tunneling which in the case of the IP protocol, tunneling involves adding a new IP header in front of the original packet, setting the protocol field in the new header appropriately, and sending the packet to the desired destination (endpoint of the tunnel) whereby the new IP header generated include adding an Authentication Header (AH) or Encapsulating Security Payload (ESP) header in front of the packet wherein the Encapsulating Security Payload (ESP) may appear anywhere in an IP packet after the IP header and whereby the two parts of the ESP header are the 32-bit Security Association Identifier (SPI) and the Opaque Transform Data field whose length is variable as set forth at col. 2 line 17 to col.

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3 line 46 in the field of electrical computers and digital processing systems: multiple computer or process coordinating which clearly anticipate establishing a tunnel between a local interworking function and a remote interworking function including the step of encapsulating data received at a constant bit rate at the local interworking function into a plurality of IP packets configured according to the CES, wherein the plurality of IP packets includes a first IP packet having a variable length as in claims 1, 17, 18, the tunnel being established to carry IP packets as in claim 3, further, col. 9 line 33 to col. 10 line 27, i.e. claim 1, which recite the use of any secure tunneling protocol and being that Allen, Jr. et al. recite the use of the layer 2 protocol clearly anticipate the tunnel includes layer 2 tunneling protocol L2TP as in claim 4, the multi-protocol label switching tunnel as in claim 5, wherein encapsulating the data comprises attaching a CES header to each IP packet as in claim 8, and the at least one circuit header as in claim 12. Col. 15 line 38 to col. 16 line 46 which recite the computer usable medium having computer readable code segments embodied thereon for implementing routing clearly anticipate the machine readable storage medium having stored thereon a plurality of machine executable instructions as in claim 18. Col. 9 lines 5-31 which recite the virtual network

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identifier being stored in the padding bytes of an AH or ESP transformation or in an IP option (in either an inner or an outer IP header) clearly anticipate the at least one circuit header comprises at least one of a circuit identification, a flag field, a sequence number, a first octet padding value, a last octet padding value, and a data field as in claim 13.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the CES configured to establish a tunnel between a local interworking function and a remote interworking function; encapsulating data received at a constant bit rate at the local interworking function into a plurality of IP packets configured according to the CES, wherein the plurality of IP packets includes a first IP packet having a variable length; the machine readable storage medium having stored thereon a plurality of machine executable instructions; the tunnel being established to carry IP packets; wherein encapsulating the data comprises attaching a CES header to each IP packet; wherein the tunnel includes layer 2 tunneling protocol L2TP; the multi-protocol label switching tunnel; wherein each IP packet further comprises at least one circuit, each circuit comprising at least one circuit header; and wherein the at least one circuit header comprises at least one of a circuit identification, a flag field, a sequence number, a first

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octet padding value, a last octet padding value, and a data field as taught by Ylonen et al. to the system of Allen, Jr. et al. because Ylonen et al. teach the desirable added feature of providing secure transmission of data packets in a network having virtual routers and said added feature of secure transmission being desirable to achieve more efficient system operation in Allen Jr. et al.

Allowable Subject Matter

1. Claims 7, 9, 11, 14-16 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

2. Claims 19 and 20 are allowed.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened

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statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any response to this final action should be mailed to:

Box AF

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for formal communications;
please mark "EXPEDITED PROCEDURE")

Or:

(for informal or draft communications, please
label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal
Park II, 2121 Crystal Drive, Arlington. VA., Sixth
Floor (Receptionist).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shick Hom whose telephone number is (703) 305-4742. The examiner's regular work schedule is Monday to Friday from 8:00 am to 5:30 pm EST and out of office on alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao, can be reached at (703) 308-5463.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Seema S. Rao
SEEMA S. RAO 12/29/03
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600

SH

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December 22, 2003